



CITY OF LODI

COUNCIL COMMUNICATION

AGENDA TITLE: Heritage School Vicinity - Various Traffic Studies

MEETING DATE: March 20, 1996

PREPARED BY: Public Works Director

RECOMMENDED ACTION: That the City Council review the following traffic studies performed in the vicinity of Heritage School and take the appropriate action.

BACKGROUND INFORMATION: Following a fatal traffic accident at the intersection of Central Avenue and Eden Street, involving Heritage School students, the City met with Lodi Unified School District (LUSD) administration to discuss concerns. As a result of that meeting and requests from the public, the following issues were evaluated:

Multi-way Stop Control Study

- Garfield Street at Eden Street
- Central Avenue at Eden Street

Adult Crossing Guard Study

- Garfield Street at Eden Street
- Central Avenue at Eden Street
- Cherokee Lane at Eden Street

Additional School Crosswalk Review

- Garfield Street at Eden Street
- Central Avenue at Eden Street

Additional School Area Signing Review

- Heritage School Vicinity

The evaluation includes a review of previous actions performed in the Heritage School area, review of current conditions, and new studies performed as indicated.

CURRENT CONDITIONS

Heritage School is located in the block east of Garfield Street and north of Eden Street. The school attendance area is bounded on the north by Lodi Avenue, Kettleman Lane to the south, Southern Pacific Railroad tracks to the west, and Highway 99 to the east (**Exhibit A**). This year-round school accommodates up to 600 kindergarten through sixth grade students. With the exception of special education students, busing is not provided by LUSD. Congestion at the school site is highest at the intersection of Garfield and Eden streets, which is located at the southwest corner of the school grounds. The City has performed several studies in the Heritage School vicinity. **Exhibit B** is a chronological list of studies performed and actions taken.

APPROVED: _____

H. Dixon Flynn -- City Manager

NEW STUDY RESULTS

Multi-way Stop Control Study

The City uses State of California Department of Transportation (Caltrans) guidelines when considering the installation of multi-way stop controls. These guidelines basically consider traffic and pedestrian volumes and the number of correctable accidents occurring in a recent 12-month period.

Garfield Street at Eden Street (Exhibit C) - Traffic at this intersection is controlled by stop signs on Eden Street at Garfield Street. Available accident records for the 4-year period from 1992 through 1995 indicate there has been one accident correctable with the installation of multi-way stop controls. There were no correctable accidents over the past 12-month period. This left-turn versus through accident did not involve pedestrians. Recent traffic volume counts performed at Garfield and Eden streets are 1,420 and 960 vehicles per day, respectively. Vehicle and pedestrian volumes are below the minimums indicated in the guidelines. Multi-way stop controls are not warranted at this intersection.

Central Avenue at Eden Street (Exhibit D) - Traffic at this intersection is controlled by stop signs on Eden Street at Central Avenue. Available accident data for the 4-year period from 1992 through 1995 indicated there were two accidents (1993 and 1994) correctable with the installation of multi-way stop controls. Neither of these two right-angle accidents involved pedestrians. The recent pedestrian accident involved a turning vehicle striking three pedestrians crossing Eden Street. Since the driver indicated the rising sun obscured his vision, it cannot be determined if this accident would be considered correctable. Recent traffic volume counts performed at Central Avenue and Eden Street are 5,375 and 750 vehicles per day, respectively. Vehicle and pedestrian volumes are below the minimums indicated in the guidelines. Multi-way stop controls are not warranted at this intersection.

Adult Crossing Guard Study

Caltrans guidelines are also used when considering the placement of Adult Crossing Guards. These guidelines consider vehicle volumes and the number of school-aged pedestrians crossing during two 1-hour periods during the day when pedestrians are going to and from school. The number of vehicles required by the guidelines varies depending on the type of traffic control existing at the intersection. At uncontrolled intersections, 40 school-aged pedestrians and 350 vehicles are needed to satisfy these guidelines. These guidelines must be satisfied for each of the two 1-hour survey periods.

Garfield Street at Eden Street - Traffic and pedestrian volumes performed at this intersection indicate that during the morning count there were 103 pedestrians and 130 vehicles. In the afternoon count, 124 pedestrians and 116 vehicles were recorded. Caltrans guidelines for an adult crossing guard are not satisfied at this intersection due to insufficient vehicle volumes, similar to previous studies.

Central Avenue at Eden Street - Traffic and pedestrian volumes performed at this intersection indicate that during the morning count there were 19 pedestrians and 245 vehicles. In the afternoon count, 66 pedestrians and 296 vehicles were recorded. Caltrans guidelines for an adult crossing guard are not satisfied at this intersection due to insufficient vehicle and pedestrian volumes, similar to the previous study.

Cherokee Lane at Eden Street - Staff has not performed an Adult Crossing Guard Study at this intersection because the only residential area where students would be expected to cross Cherokee Lane is adjacent to the traffic signal at Hale Road. An Adult Crossing Guard currently assists students crossing at this intersection. While no crossing is completely safe, the benefits of crossing at Hale Road far exceed crossing at Eden Street, even with the assistance of an Adult Crossing Guard. Placing an Adult Crossing Guard at Eden Street would only encourage students to cross at this location. Heritage School administration has indicated they will again notify students and parents to cross Cherokee Lane at Hale Road instead of Eden Street.

Additional School Crosswalks

The City has reviewed the locations of school crosswalks at the intersections of Central Avenue at Eden Street and Garfield Street at Eden Street. According to the California Vehicle Code, crosswalks exist at all intersections whether they are indicated by painted lines (marked) or not (unmarked). Studies indicate that while more pedestrians use marked than unmarked crosswalks, more accidents occur in the marked crosswalks. These factors indicate that marked crosswalks should be used as pedestrian guides and not as safety devices. The existing crosswalks at these intersections have been placed to guide school pedestrians to the intersection of Garfield and Eden streets, where Student Crossing Patrols can assist students crossing. The routes to Heritage School are shown on the "Suggested Route to School" map (**Exhibit E**). Similar maps are prepared by the City for all elementary schools and provided to LUSD for distribution to students and parents.

Additional School-Area Signing

Caltrans guidelines are used when placing school area signing. These guidelines provide consistency, which assists drivers by letting them know what they can expect at various schools. Major concerns regarding school-area signing is oversigning and placing school signs too far from school sites. Installing too many signs can lead to driver confusion and disrespect. Signs placed too far from the school site can lose effectiveness, particularly when school-related activity is infrequent.

DISCUSSIONS/RECOMMENDATIONS

While the City is, and has always been, very concerned about the safety of pedestrians, the facts are the needs of pedestrians and drivers are diverse. Since the mixture of pedestrians and vehicles are here to stay, the needs of each must be balanced. While many believe pedestrian safety issues can be resolved by adding more traffic control devices, such as stop signs, in many cases improperly used traffic control devices can lead to increased vehicle and pedestrian accidents. While most drivers are reasonable, when confronted with unreasonable restrictions, flagrant violations may result. The combination of the false sense of security that stop signs portray to pedestrians and the contempt drivers feel for having to stop unnecessarily can create a more hazardous condition than previously existed. Based on the study results and other factors indicated, staff's recommendations are as follows:

Multi-way Stop Controls

At intersections of major and minor streets, such as Central Avenue at Eden Street, the major street is typically not controlled. Major streets, such as Central Avenue, are designed to carry larger volumes of traffic as expeditiously as reasonable. It would not be practical to stop all of the vehicles on Central Avenue at every minor street crossing, especially due to the relatively short period of time the students are using the crossing. *Multi-way stop controls are not recommended at the intersection of Central Avenue and Eden Street.*

At minor street intersections, such as Garfield Street and Eden Street, traffic controls are either not used or are placed on the street carrying the least amount of traffic. This allows the street with the majority of traffic to flow uninterrupted. Based on existing traffic volumes, the traffic control is on the correct street. Since overall traffic volumes at the intersection are low, the use of multi-way stop controls would create a minimal amount of overall delay for drivers. However, traffic volumes and pedestrian activity are greatest at the times when students are going to and from school. Due to increased traffic and pedestrian activity during this time period, installing multi-way stop controls at this intersection would not reduce congestion, but increase the length and severity of congestion due to the additional unnecessary stops that would be required by drivers on Garfield Street. *Multi-way stop controls are not recommended at the intersection of Garfield and Eden streets.*

Adult Crossing Guards

Caltrans guidelines for Adult Crossing Guards are not met at either of these intersections. Both vehicle and pedestrian volumes are below the guidelines at the intersection of Central Avenue and Eden Street. At the intersection of Garfield and Eden streets, pedestrian activity is significant, but vehicle volumes are low. Due to low vehicle volumes, staff surveyed both intersections during periods of light rain when students are more likely to be driven to school; vehicle volumes still remained low. Even though State guidelines for adult crossing guards are not satisfied at these intersections, it does not prohibit LUSD from placing an Adult Crossing Guard at these or any location. The funding of all Adult Crossing Guards has been entirely the responsibility of LUSD since 1993 due to changes in the legislation. Training of Adult Crossing Guards is performed by LUSD as authorized by the Police Chief.


An adult volunteer is currently assisting at the intersection of Garfield and Eden streets. Per Section 10.12.030 of the Lodi Municipal Code, only persons authorized by the Police Chief can direct traffic. Since the adult at this intersection has not been trained, LUSD has been informed of the need to correct this problem. In addition, we have discussed the removal of the student patrol that previously assisted crossing at Garfield and Eden streets. LUSD is also looking into this matter.

Additional School Crosswalks and School-Area Signing

Based on a review of school crosswalks in the area, staff feels they are properly located for the purpose of guiding students. Also, based on Caltrans guidelines, all of the required school-area signing is installed. Studies indicate that arbitrarily adding crosswalks or pedestrian crossing signs may increase pedestrian-related accidents by reducing the amount of caution pedestrians feel is needed due to the false sense of safety provided by these signs and markings. Staff does not recommend that additional school crosswalks or school-area signing be installed.

As an informational note, traffic engineering staff has recently applied for a grant to increase the level of pedestrian and bicycle safety for school-aged children. In many cases, pedestrian and bicycle accidents are caused by poor judgment or inattention, both of which can be corrected by public education; however, this type of education should begin in the home. During our surveys performed adjacent to the school, staff observed several drivers stopping in the roadway or middle of the intersection adjacent to the school to drop off passengers. Pedestrians were also observed crossing diagonally and midblock and bicyclists riding in crosswalks and not obeying traffic controls. Unfortunately, many students were performing these acts at the direction of adults. **Staff will also be recommending that educational programs and Police enforcement be performed to address the problems observed.**

FUNDING: Not applicable.



Jack L. Ronsko
Public Works Director

Prepared by Traffic Engineering Staff
Attachments

cc: City Attorney
Police Chief
LUSD Superintendent
LUSD Police Services - Biglow
Police Department CSO Fuhs
Police Captain Adams
Associate Traffic Engineer
Heritage School Principal and Vice Principal
Concerned Citizens

Exhibit B

Heritage School Vicinity - Previous Studies and Actions

- November 1985
 - Central Avenue at Eden Street - studied intersection for adult crossing guard at the request of School District. Caltrans guidelines not satisfied.
- December 1987
 - Garfield Street at Eden Street - studied intersection for adult crossing guard at the request of School District. Caltrans guidelines not satisfied.
- January 1988
 - Garfield Street at Eden Street - studied intersection for multi-way stop controls at the request of School District. Caltrans guidelines not satisfied.
- January 1988
 - Garfield Street at Eden Street - installed "no parking" zones adjacent to crosswalks to improve visibility of student patrols and vehicles.
- February 1989
 - Heritage School Vicinity - reviewed school area signing for compliance with Caltrans guidelines. All school signing and marking required by Caltrans are installed.
- May 1989
 - Garfield Street at Eden Street - studied intersection for adult crossing guard and multi way stop controls. Caltrans guidelines not satisfied for either.
- July 1991
 - Cherokee Lane at Hale Road - studied intersection for adult crossing guards at the request of the School District based on the eliminating of the student bussing within the city limits. Caltrans guidelines not satisfied. School funded Adult Crossing Guard placed.
- August 1991
 - Cherokee Lane at Hale Road - Council approved overhead flashing yellow beacon installation. Caltrans guidelines not satisfied.
- October 1991
 - Cherokee Lane at Hale Road - restudied intersection for adult crossing guards at the request of the School District during tracks with highest number of students. Caltrans guidelines not satisfied. Adult Crossing Guard funded by the School District.
- June 1993
 - Cherokee Lane at Hale Road - traffic signal activated.
- November 1993
 - Garfield Street at Eden Street - studied intersection for adult crossing guard. Caltrans guidelines not satisfied.


CITY OF LODI
 Public Works Department

**MULTI-WAY STOP SIGN
WARRANTS**
INTERSECTION OF: Garfield Streetand Eden StreetDATE: March 7, 1996BY: R. Kiriu

Any of the following conditions may warrant a multi-way STOP sign installation.

1. Where traffic signals are warranted and the need is urgent, the four-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the signal installation.

Satisfied _____ Not Satisfied X

2. An accident problem, as indicated by five or more reported accidents of a type susceptible of correction by a multi-way stop installation in a 12-month period. Types of accidents susceptible of correction include right angle and left turn collisions.

Time period Jan - Dec 1995Total number of accidents 0Number of correctable accidents 0Satisfied _____ Not Satisfied X

3. Minimum volume warrant:

- a. The total vehicular volume entering the intersection from all approaches must average at least **500** vehicles per hour for any eight hours of an average day, and

Hour								
Major Street	113	154	71	91	104	187	99	103
Minor Street	95	82	74	66	63	133	74	68

Highest eight hours _____ a.m. to _____ p.m.

Total volume 1577 vehiclesAverage per hour 197 vehicles

- b. The combined vehicular and pedestrian volume from the minor street or highway must average at least **200** units per hour for the same eight hours with an average delay to minor street vehicular traffic of at least 30 seconds per vehicle during the maximum hour.

Hour								
Minor St Vehs	95	82	74	66	63	133	74	68
Pedestrians								

Highest eight hours _____ a.m. to _____ p.m.

Average per hour 82 vehiclesAverage per hour 0 peds (EST)Average units per hour 82118 Peds per hour or 945 total needed to satisfy.Satisfied _____ Not Satisfied X

4. When the 85-percentile approach speed of the major street traffic exceeds 40 miles per hour, the minimum vehicular volume warrant is 70 percent of the above requirements.

85-percentile speed 25 (prima facie) MPHSatisfied _____ Not Satisfied X

A four-way STOP sign installation is a useful traffic control measure when other available means of control are not adequate. It should not be used unless the volume of traffic on the intersecting roads is about equal and is undesirable at low volume intersections.

Traffic major street 60 %Traffic minor street 40 %

Approved by: _____

Multi-way Stop Warrants Satisfied: yes _____ no X

Reference: Caltrans Traffic Manual

Mar-96



CITY OF LODI

Public Works Department

MULTI-WAY STOP SIGN WARRANTS

INTERSECTION OF: Central Avenue and Eden Street
 DATE: March 7, 1996 BY: R. Kiriu

Any of the following conditions may warrant a multi-way STOP sign installation.

1. Where traffic signals are warranted and the need is urgent, the four-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the signal installation.

Satisfied _____ Not Satisfied X

2. An accident problem, as indicated by five or more reported accidents of a type susceptible of correction by a multi-way stop installation in a 12-month period. Types of accidents susceptible of correction include right angle and left turn collisions.

Time period Jan - Dec 1995
 Total number of accidents 2

Number of correctible accidents 0
 Satisfied _____ Not Satisfied X

3. Minimum volume warrant:

- a. The total vehicular volume entering the intersection from all approaches must average at least **500** vehicles per hour for any eight hours of an average day, and

Hour								
Major Street	299	378	346	455	492	508	494	424
Minor Street	42	36	46	58	53	73	91	82

Highest eight hours _____ a.m. to _____ p.m.
 Total volume 3877 vehicles
 Average per hour 485 vehicles

- b. The combined vehicular and pedestrian volume from the minor street or highway must average at least **200** units per hour for the same eight hours with an average delay to minor street vehicular traffic of at least 30 seconds per vehicle during the maximum hour.

Hour								
Minor St Vehs	42	36	46	58	53	73	91	82
Pedestrians								

Highest eight hours _____ a.m. to _____ p.m.
 Average per hour 60 vehicles
 Average per hour 0 peds (EST)
 Average units per hour 60
 Satisfied _____ Not Satisfied X

140 Peds per hour or 1,119 total needed to satisfy.

4. When the 85-percentile approach speed of the major street traffic exceeds 40 miles per hour, the minimum vehicular volume warrant is 70 percent of the above requirements.

85-percentile speed 27 MPH
 Satisfied _____ Not Satisfied X

A four-way STOP sign installation is a useful traffic control measure when other available means of control are not adequate. It should not be used unless the volume of traffic on the intersecting roads is about equal and is undesirable at low volume intersections.

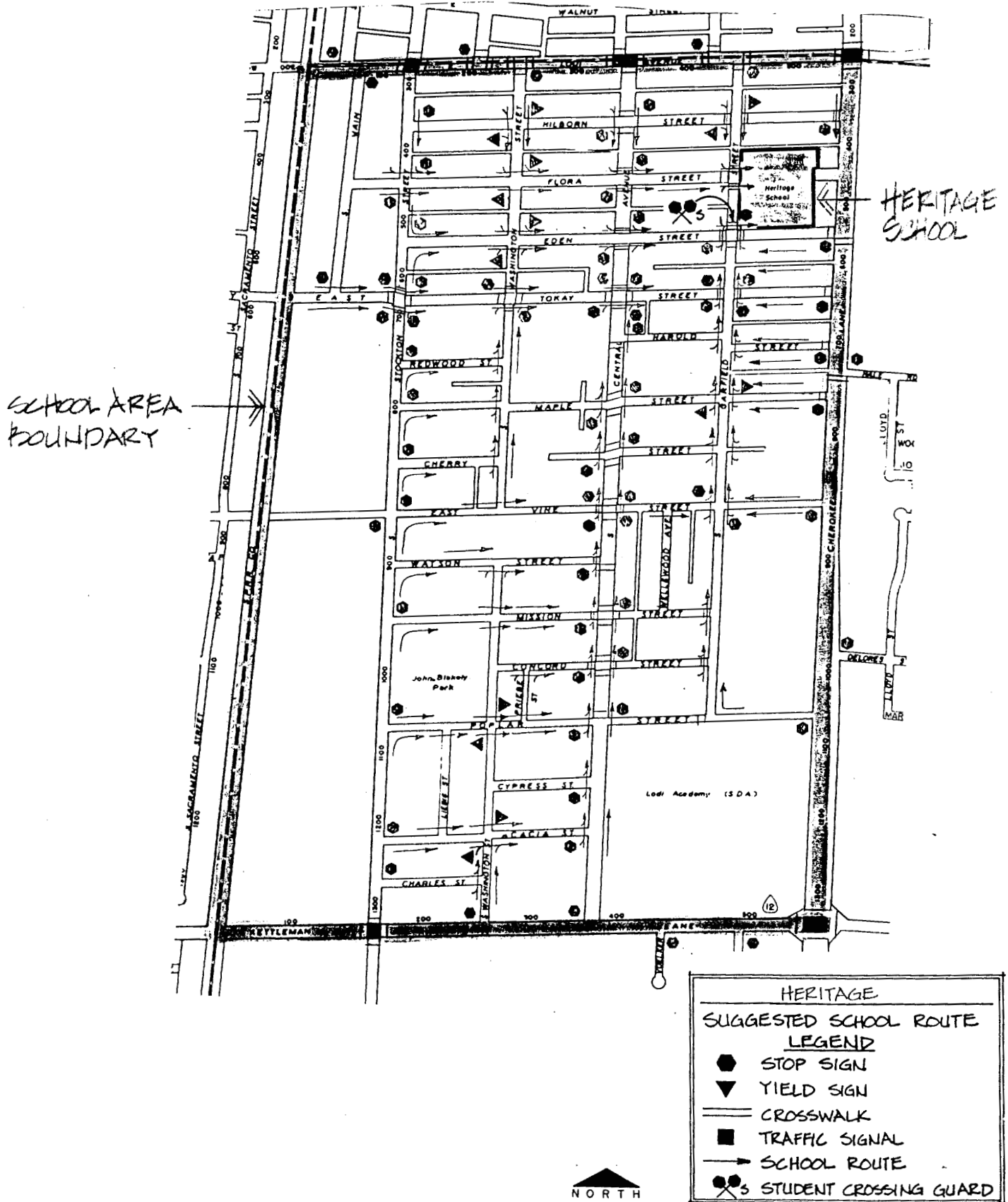
Traffic major street 88 %
 Traffic minor street 12 %

Approved by: _____ Multi-way Stop Warrants Satisfied: yes _____ no X

Reference: Caltrans Traffic Manual

Mar-96

Exhibit E



CITY COUNCIL

DAVID P. WARNER, Mayor
PHILLIP A. PENNINO
Mayor Pro Tempore
RAY G. DAVENPORT
STEPHEN J. MANN
JACK A. SIEGLOCK

CITY OF LODI

CITY HALL, 221 WEST PINE STREET
P.O. BOX 3006
LODI, CALIFORNIA 95241-1910
(209) 333-6706
FAX (209) 333-6842

H. DIXON FLYNN
City Manager
JENNIFER M. PERRIN
City Clerk
RANDALL A. HAYS
City Attorney

March 14, 1996

SUBJECT: Heritage School Vicinity - Various Traffic Studies

Enclosed is a copy of background information on an item on the City Council agenda of Wednesday, March 20, 1996, at 7 p.m. The meeting will be held in the City Council Chamber, Carnegie Forum, 305 West Pine Street.

This item is on the regular calendar for Council discussion. You are welcome to attend.

If you wish to write to the City Council, please address your letter to City Council, City of Lodi, P. O. Box 3006, Lodi, California, 95241-1910. Be sure to allow time for the mail. Or, you may hand-deliver the letter to the City Clerk at 305 West Pine Street.

If you wish to address the Council at the Council meeting, be sure to fill out a speaker's card (available at the Carnegie Forum immediately prior to the start of the meeting) and give it to the City Clerk. If you have any questions about communicating with the Council, please contact Jennifer Perrin, City Clerk, at (209) 333-6702.

If you have any questions about the item itself, please call Paula Fernandez or Rick Kiriou at (209) 333-6706.



Jack L. Ronsko
Public Works Director

JLR/pmf

Enclosure

cc: City Clerk

MAILING LIST FOR NOTICE OF CITY COUNCIL MEETING REGARDING
HERITAGE SCHOOL VICINITY - VARIOUS TRAFFIC STUDIES

Organization	Name	Address
HERITAGE SCHOOL	PRINCIPAL MARY GRAHAM	509 E. EDEN LODI CA 95240
HERITAGE SCHOOL	VICE PRINCIPAL BINDY GREWALL	509 E EDEN LODI CA 95240
LODI UNIFIED SCHOOL DISTRICT	ACTING SUPERINTENDENT DEL ALBERTI	1305 E VINE LODI CA 95240
LODI UNIFIED SCHOOL DISTRICT	ADMIN DIR TO ELEM PRINCIPALS PAT HILL	1305 E VINE LODI CA 95240
	MELISSA OHM	509 E EDEN LODI CA 95240
	BARBARA MCKAY	425 EDEN LODI CA 95240
LUSD POLICE SERVICES	DIRECTOR FRANK BIGLOW	1305 E VINE LODI CA 95240